

# THE PLOTTER

CLACKAMAS COMPUTER APPLIED  
TRAINING SOCIETY  
NEWS LETTER

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VOLUME 12

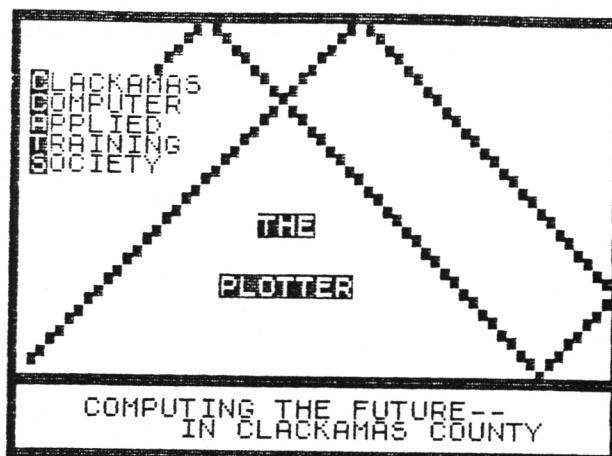
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## MEETING

The APRIL meeting will be:

on: SUN., APRIL 16, 1994

MEETING 2:00 TO 5:00 P.M.  
at: Rod Gowen's home  
14784 S. Quail Circle  
Oregon City

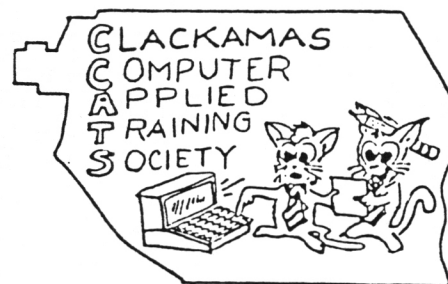
## WHAT YOU WILL FIND IN THIS ISSUE:

MEETING-----PAGE 1  
FROM THE EDITOR'S DESK-----PAGE 1  
CONTINUED-----PAGE 2  
PRINTERS, PRINTERS-----PAGE 2  
CONTINUED---PAGES 3,4  
A COCHROACH STORY-----PAGE 4  
CONTINNUED-----PAGE 8  
TWELVE COINS-----PAGE 5  
CONTINUED-----PAGE 6  
RMG UPDATE NEWS-----PAGE 7  
NOTICE-----PAGE 8  
ADS/SUBSCRIPTION-----PAGE 8

## FROM THE EDITOR'S DESK

This month we present an article on bubble type printers that can produce very good results comparable to many laser type printers. This is a comprehensive review that makes good reading.

I spotted the little quiz about cockroaches in our local newspaper and proceded to turn it into a Sinclair BASIC program after I had tried out my solution on paper. If the reader tries for a solution before looking at my program it makes it more interesting (for those who program in BASIC). For GWBASIC fans there is a solution in that language. Depending on space, there might be a solution in QBASIC this month also, or it may be carried over to next month.



We are ready to print up our first run of THE BEST OF THE PLOTTER. For those readers who are relatively new to our little user group we decided that there was a lot of original material (developed by members) in our many issues of 10 years publishing that might be of interest to members of other user groups as a personal reference, and also to individuals who subscribe to our newsletter. Back in the early days with T/S 1000 and ZX 81 computers, the 2040 printer, and a little added memory, we started our first issue. After a few tries at a good page layout we developed the early graphics we still use on the front page. The plotted image was within the range of those early devices. Since changing over to large printers it has been a challenge to duplicate this simple image. Which brings up a point, should this image be modernized or left as is? Early day Sinclair users will recognise this graphic as a bouncing ball. Our 2-cat logo came a little later. It was reduced from a large drawing and remained the same over the years. I tried a printer graphic program for large printers but it just didn't look the same.

Surprisingly, the Twelve Coin puzzle has generated a great response from one of our readers, George Chambers of the Toronto user group. Just key in his program and try to beat his score of 4 weighings. I figure that under the best of conditions, testing with 2 coins which can prove 10 coins are good, a second test with one of these 2 coins against one of the 10 good ones can prove which one is counterfeit.



## PRINTERS, PRINTERS

by: Rod Gowen

Have any of you looked at the new generation of computer printers lately? If not, you may be in for some surprises. Some good, some bad! As a dealer who likes to keep up with what is happening in the world of computers so that I can better serve my customers, I have occasion to try out various printers from time to time. As a user, I like to know if there is something out there that can help my printing look better. For these reasons as well as just plain curiosity, I recently tried out a couple of new printers just recently released by Citizen America.

The first one I tried out was the ProJet II, an inkjet printer that is 100% compatible with the HP Deskjet family of printers. This is a nice looking, streamlined printer that boasts a lot of features. It comes standard with a 70 sheet automatic sheet feeder, 128K buffer (expandable to 384K via a simple top-of-printer plug in memory cartridge), 6 built-in fonts, 300dpi resolution maximum, easy to set "switches" and quiet <48dba operation. It comes complete with paper input tray, output tray, manual, Windows driver disk and a printhead/ink cartridge. Quite a package!

When it arrived, I opened the box and started setting it up. I put it on the desk, installed the paper input tray and catch tray. I then installed the printhead/ink cartridge and was ready to try it out. The installation of the printhead/ink cartridge was easier than I had expected it to be. It was merely a matter of lifting the top cover of the printer, moving the head bracket to the extreme right of its travel, inserting the printhead/ink cartridge straight down into the bracket and pressing it toward the front of the printer until a click was heard. A note here about the printhead/ink cartridge may be in order here. Unlike the HP and Canon inkjet printers, the ProJet II uses a separate printhead and ink cartridge. With the HP and Canon,

each time you toss the cartridge, you are also tossing the printhead. This may be good or bad depending upon your point of view, I guess. If you look at it from the standpoint of reliability, I guess changing the printhead every 300-500 pages would always insure that you have a very clean set of ink jets. From the standpoint of cost, this raises the cost per page by more than 28%! RMG sells the printhead/ ink cartridge combo for the ProJet II for \$35 and the 2 pack of ink cartridges for \$22.50. The HP or Canon Cartridges are about \$28-35 depending on where you get them. If you figure a minimum of 300 pages per cartridge and 3600 pages per printhead on the ProJet II, you come up with a cost per page of approximately 7 cents per page while the HP would be about 9.5 cents per page. These prices include 1/2 cent per page of paper. The cost of the printers are quite similar. You could probably find an HP 500 for about \$300 and the ProJet II can be found for about the same.

I found the setting of the options very easy. The ProJet has a covered "bar" across the middle of the printer under the top cover which, when opened, exposes a series of "slides" that can be moved forward or backward. These slides control the font selection, the density and all of the other familiar things we like to adjust and customize on our printers. To turn one "on", one simply slides it toward the rear of the printer. After they are all set, you close the cover on the bar and the top cover, reset the printer and it will operate with the new "defaults". The slides are not switches, they are simply nylon pins that stick out and, when the print head moves back and forth on initialization, a small "reader" or sensor "reads" the pins sticking out. A unique and easy way to do it!

Now that I was ready, I turned the printer on while holding down the LF button and it started its self-test. After printing out a half dozen pages or so, it stopped and I examined the results. Impressive, to say the least! What a difference 300 dpi makes.

I then plugged it into my computer and tried printing something from a text editor. I found out rather quickly that this is where the BIG difference lies in using the new breed of printers! The escape codes built into the software I was using were not recognized by the printer. I went to the book and soon found that one almost had to be a graphics programmer to get the printer to do what you wanted from BASIC or by using escape codes. I soon gave this up and loaded Windows, went into WRITE, a Windows text editor, and entered some sample text lines and printed them out with full success. It would seem that, as long as you only want to use the ProJet II to print from software that supports the HP Deskjet family of printers, you will have no problem with this fine printer.

The second printer I want to tell you about is the Citizen GSX-220 24 wire dot matrix printer. This is the newest release from Citizen. This printer is the first dot matrix that I have seen that would do 360x360dpi resolution! They have re-designed the printhead to a diamond shape instead of the usual "in-line" wires. This evidently prolongs the life of the head as well as bringing the noise level down to an unbelievable <48dba! This is also the first dot matrix printer that I have seen shipped standard with a 50 sheet automatic sheet feeder and made the tractor feed optional!

After receiving the printer, I set it up per the "Quick Start" instruction sheet and liked the looks. The ribbon is the same as for all models for the past 2-3 years. The top load ASF (automatic sheet feeder) is different but it works fine. The optional tractor feed simply snaps into the back of the printer and it allows for paper parking. The real noticeable difference that I immediately saw was the fact that there was no platen knob on either side of the printer! There is a thumb wheel for moving paper under the top cover. Otherwise, the book recommends using the LF/FF and PARK to do your paper

moving.

This printer is unique in another way--it has NO DIP SWITCHES! All of the settings are done via the VUE-PRINT MENU or from a program in your PC that will download your macro with all the settings in it to the printer. If you are not using a PC you would have to use the VUE-PRINT MENU. This is Citizen's engineers try at "making it easier" to set the printer up. To use it, you press and hold the PARK button on the control panel for 3 seconds. The printer will then print the first menu option and the choices for that option. In this case, the first option is type of emulation. The choices are EPSON, IBM or AUTO. The printed line will have one of the choices underlined. This is the current setting. To change the setting you press the ON-LINE button and the print head moves to the right of each choice in its turn. When the one you want is just to the left of the print head, you press the LF/FF button and that choice is written into the printer's ROM and the printer prints the next menu option. It took me about 5 minutes to set or reset all of the options available via this menu.

I then ran the self-test and was amazed at the resolution. It comes real close to an inkjet. I proceeded to hook it up to my computer and, even though the book said it was EPSON LQ compatible, it would not accept the escape codes from my text editor any better than the ProJet had! It may have been defective or something I was doing wrong, but I decided, after 30 minutes on the phone to Citizen tech support, to give up and test it from software that supported the GSX-240 Citizen printer from Windows and it worked perfectly.

I think that what I said about the ProJet II goes here as well--if you are just going to use it from software that supports it, it will do a GREAT job. However, if you want to send escape codes, be sure you are prepared to do some trial and error programming. At about \$250 or less, this is a real nice printer.

If you would like more info (spec sheet or exact pricing) you can send a business (#10) S.A.S.E. to RMG at the address on the back of this newsletter or give us a call.

## A COCKROACH STORY

by Marilyn vos Savant

This little story by Marilyn appeared in our Sunday paper. You are to come up with the answer as requested at the end. It is an easy one to convert into a computer program to get the answer.

You wake up in the middle of the night and are seized with the urge to fry up a nice pork kidney. As you turn on the light in the kitchen, though, you see a platoon of 25 cockroaches marching across the floor. Because you're a professional exterminator, you don't hesitate to take action. First, you grab a frying pan and mash one-fifth of them with it. As they begin to scatter, you leap out of the way and bang your head on the bottom of an overhead cabinet, sending a shower of dishes to the floor, which crushes one-fourth. Jumping backward, you accidentally upend the kitchen table, which smashes one-third flat. Grasping the frying pan again, you raise it over your head threateningly, taking out the overhead light, which crashes to the floor, squashing one-half. Then the cat strolls in and eats the remainder.

As you stand quietly by and listen to her little crunching noises, you notice that each action annihilates the same number of roaches--which doesn't make sense to you, based on the above fractions. How can you explain it?

The Editor's answer appears elsewhere in this newsletter, after you enter the program in either Sinclair BASIC or GWBASIC. Of course T/S 1000 users are also welcome to try a program for this little puzzler.



## TWELVE COINS

Dick F. Wagner

We received a nice reply to our puzzle about 12 coins of equal denomination but one was a counterfeit. With a balance, determine which is the counterfeit coin, bearing in mind that this coin can be lighter or heavier than the others.

George Chambers from the Toronto Timex Sinclair Club took the time to develop a program to do just that, all the user has to do is to put in the coins for the program to test. As the intent is to do this with the least number of weighings, group weighings are required. George claims to obtain an answer in 4 tests. I tried several times and obtain the correct answer in 5 weighings. I stumbled for a while on the fact that the computer only tells which side of the balance is heavier, not because one side had the heavier coin. In other words, one side could have the coins on the balance all equal and the other side could have a heavy coin, making it the heavy side, or it could have a light coin, making the side with equal weight coins heavy--tricky!

As the program takes up a little more than a page, we include it in this issue. Please note that while the program is saved to LKDOS, line 9000 is the only line requiring adjustment for the user's storage method. We thank George, and also Don Lambert for their contributions.

After trying the program for while, I discovered that I was really trying to analyze my steps, not just a haphazard punching of keys. Be sure and make notes of your steps to help you study the problem.

A run that required 7 tries went like this: weigh 4 coins A-D against E-H to test for equal weight and/or eliminate I-L. The result was A-D weighed more, eliminating I-L. Test A,B against C,D with results equal. This leaves E,F to test against G,H. E,F tested more so it might have a heavy coin, or G,H might have a

light coin. I made a mistake of selecting C,D (equal weights) to test against E,F. E,F tested equal leaving G and H. Weighing G against H was another error of judgment as I lacked a standard. Anyway, I still didn't have a good answer until the 7th test when I tested H against C with equal weights so that left G as either heavier or lighter, but counterfeit anyway.

5 REM  
10 REM TWELVE COINS PUZZLE

20 REM       Written by  
              G. Chambers  
              14 Richome Ct.  
              Toronto, Ont  
              CANADA M1K 2Y1

30 REM       JANUARY 1994

40 REM It takes me 4 balances.  
      Can you do better? GFC  
I think it is probably possible.

```

50 GO SUB 700
60 LET W=0: LET P=0: POKE 2365
8,8: DIM A(12): DIM D$(64)
70 INPUT "Do you want instructions?";i$: IF i$<>"Y" OR i$<>"N"
THEN GO TO 80
80 IF i$<>"Y" AND i$<>"N" THEN
GO TO 70
90 IF i$="Y" THEN GO SUB 1000
100 FOR N=1 TO 12
110 LET A(N)=10
120 NEXT N
200 LET R=INT ((RND*11)+1.5)
210 LET S=INT ((RND*2)+9.5): IF
S=10 THEN GO TO 210
220 LET A(R)=S
300 GO SUB 700: DIM Z$(12): LET
W=W+1
305 PRINT "  Select the coins (
A to L) you wish to place on the
LEFT tray of the balance scale
.", " Press ""X"" to terminate en
tries."
307 PRINT TAB 10; INK 1;"Test N
o.";W
310 PRINT AT 7,0;"COINS PLACED"
""LEFT TRAY: """: LET R=0
320 FOR N=1 TO 12
330 BEEP .05,40: INPUT X$: IF X
$="X" THEN LET N=12: GO TO 380
340 IF X$>"L" OR X$<"A" OR CODE
X$=0 THEN GO TO 330
350 GO SUB 800
355 PRINT AT 18,0;D$;AT 24-P,N*

```

```

360 LET X=(CODE X$-64): IF X=-3
2 THEN LET X=0: PRINT AT 24-P,(N
-1)*2;: GO TO 330
370 PRINT INK 1;X$;" ";: LET R=
R+A(X)
380 NEXT N
390 PRINT : PRINT
400 PRINT " Select the coins (
A to L) you wish to place on the
LEFT tray of the balance scale
.", " Press "X" to terminate en
tries."
410 PRINT AT 7,15;"COINS PLACED
";AT 8,15;"RIGHT TRAY: ";AT 10,1
5;: LET L=0
420 FOR N=1 TO 12
430 BEEP .05,35: INPUT X$: IF X
$="X" THEN LET N=12: GO TO 490
440 IF X$="X" THEN LET N=12: GO
TO 460
450 IF X$>"L" OR X$<"A" OR CODE
X$=0 THEN GO TO 430
460 GO SUB 800
465 PRINT AT 18,0;D$;AT 24-P,(N
*2)+13;
470 LET X=(CODE X$-64): IF X=-3
2 THEN LET X=0: PRINT AT 24-P,(N
*2)+13;: GO TO 430
480 PRINT INK 1;X$;" ";: LET L=
L+A(X)
490 NEXT N
500 PRINT AT 17,0;D$;AT 17,0; I
NK 1;(" The RIGHT tray weighs m
ore." AND L>R)+(" The LEFT tray
weighs more." AND R>L)+("Both t
rays are of equal weight." AND L
=R)
510 PRINT AT 20,0;"Press P)rint
, B)alance, C)heat; or ENTER for
new game"
520 PAUSE 0
530 IF CODE INKEY$=67 THEN GO T
O 900
540 IF CODE INKEY$=13 THEN RUN
550 IF CODE INKEY$=66 THEN CLS
: GO TO 300
560 IF CODE INKEY$=80 THEN GO S
UB 600: GO SUB 510
570 CLS : GO TO (300 AND G$="Y"
)+(560 AND G$="N")
599 STOP
600 IF SCREEN$ (6,10)<>"T" THEN
CLS : GO SUB 700: GO TO 510

```

```

610 LET LINE=6: GO SUB 620: LPR
INT : LPRINT : LPRINT : LET LINE
=8: GO SUB 620: LET LINE=10: GO
SUB 620: LPRINT : LPRINT : LET L
INE=17: GO SUB 620: LET LINE=18:
GO SUB 620: LPRINT TAB 8;"*****
*****": LPRINT : LPRINT : RET
URN
620 FOR N=0 TO 31: LPRINT SCREE
N$ (LINE,N);: NEXT N
630 RETURN
700 PAPER 6: BORDER 6: CLS
710 PRINT TAB 4; INK 2;"THE TWE
LVE COINS PUZZLE""
720 RETURN
800 LET P=PEEK 23689: FOR J=1 T
O 12
820 IF X$=Z$(J) THEN PRINT AT 1
8,0;D$;AT 18,0;"You have placed
this coin in the tray already...
Select another.": LET X$=" ": LE
T J=12: PAUSE 150: RETURN
830 NEXT J
850 FOR K=1 TO 12
860 IF Z$(K)=" " THEN LET Z$(K)
=X$: LET K=12
880 NEXT K
890 RETURN
900 CLS : GO SUB 700: PRINT "Th
e weights of the 12 coins are as
follows:"
910 PRINT ' : FOR N=1 TO 12: PRI
NT CHR$ (N+64);TAB 5;A(N): NEXT
N
920 PRINT '"PRESS A KEY": PAUSE
0: GO TO 510
1000 PRINT " You have 12 almos
t identical coins. All are the s
ame denomin-ation. One is a cou
nterfeit, and is either slight
ly heavier or lighter than the
others"
1010 PRINT '" Can you locate it?
You have at your disposal a bal
ance scale. Remember, a balance
has two pansso weights can be p
ut in one panto balance weights
in the other."
1020 PRINT '" The puzzle is to
find how few weighings are neede
d."
1030 PRINT '" The coins are re
presented by the letters A to L.
Select the coins you wish to c
ompare."
1040 PRINT '"Press any key to st
art the game": PAUSE 0: RETURN
7999 STOP
8999 STOP
9000 RANDOMIZE USR 100: SAVE "TW
ELVE.B1" LINE 1

```

**RMG UPDATE NEWS FOR APRIL 1994**  
**VOLUME 6, NUMBER 4**

**\*\* RMG NEWS \*\***

Are you ready for summer? Our friends on the east coast and upper midwest must surely be looking forward to some warmer weather! Having been raised and having lived on the "Great Plains" for the first 21 years of my life, I can sympathize and am never sorry to have moved to the west coast at that time. Here in Oregon we have perhaps the most benign weather of the whole continental US. A bit wet at times, but no serious extremes in temperature.

On to computers! We have a few changes this month (not many, as not much was sold) and some new items that may be of interest. We have a 30 day special on the new Citizen ProJet II ink jet printer. After having one here for testing, I can tell you that this is one nice printer. It is fully HP Deskjet compatible and is really "laser quality" at 300dpi. Take a look at the enclosed flyer on it and see what you think. We have 1 ONLY DEMO UNIT (used only to test out, printed about 50 sheets) that we will sell for \$270PP! If you would like the extra ink cartridge/print head with it, it will run \$300PP! It will be "first-come, first-served" on this one unit only. This is really an inexpensive way to get into an inkjet printer that does laser quality. As you can see by the flyer, after this one demo unit is sold, anyone who wants one of these fine printers can still get one for only \$279 plus \$15 PH.

DOHANY PD DISK--has sure drawn the interest of the LKDOS users out there! I have filled all orders for the disks and will continue to do so. THE PLOTTER for March carries a review of some of the utilities on this disk. The price is still only \$5 (including postage). Be sure to tell us the format you require. (5.25"/3.5", 40 track/80 track, single or double sided). As reported earlier, THE BEST OF THE PLOTTER is still in progress and should be ready in a month or two. We are down to the last few changes in layout and will then be getting the masters ready so we can have it printed. We will keep you posted here and in THE PLOTTER as too our progress on this project.

It seems that all of the newsletter editors are having the same problem, that is, the lack of original material to publish. It seems to be the same old story, you folks like to read the articles and newsletters as long as you don't have to do anything to help get the information into it. Just stop and think of how you would feel if you were hapless enough to be given the job of newsletter editor and then realized that there would be very little help forthcoming from the membership/readership at large! I try to do my part. If you look at any copy of THE PLOTTER, the monthly publication of CCATS group, you will find two names prevalent, mine and Dick Wagner's. Dick is the editor and I am the former editor. What does that tell you? C'MON FOLKS! LET'S HELP OUT THESE BELEAGUERED STALWARTS OF THE PUBLISHING INDUSTRY! SEND IN SOMETHING THAT WE CAN PRINT!!!!

**KEEP WATCHIN' FOR MORE NEWS!** Rod Gowen, Owner, RMG Enterprises  
14784 South Quail Grove Circle, Oregon City, OR 97045  
503/655-7484 8AM-6PM PT \* FAX/VOICEMAIL: 503/655-4116 24 HRS

-NOTICE-

```
4 REM Dick Wagner 3/27/94
5 REM the answer to the
cockroach story in this issue.
6 PRINT " *****
***** *ANSWER TO THE COCK
ROACH STORY* *****
*****"
7 PRINT : PRINT
10 LET A=25
20 LET B=A-1/5*A
30 LET C=B-1/4*B
40 LET D=C-1/3*C
50 LET E=D-1/2*D
55 PRINT "25 COCKROACHES MARCH
ING ACROSS THE FLOOR"
60 PRINT : PRINT "YOU KILL ";A
-B;" WITH FRYING PAN"
70 PRINT "YOU KILL ";B-C;" WIT
H DISHES"
80 PRINT "YOU KILL ";D-E;" WIT
H KITCHEN TABLE"
90 PRINT "YOU KILL ";E;" WITH
KITCHEN LAMP"
100 PRINT "THE CAT EATS";" ";A-
1/5*A-1/4*B-1/3*C-1/2*D;" COCKRO
ACHES"
110 PRINT : PRINT "          TH
E END"
```

Opinions expressed in articles are not necessarily those of members of the Clackamas Computer Applied Training Society. Meeting minutes carry the consensus of members present at meeting. This newsletter nor staff will not be held liable for any damage or consequences due to following instructions, or review of products as contained in this newsletter

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